

CLAIMS

1. A transformable toy provided with an extension and contraction structure capable of extending and contracting, comprising a plurality of components connected via connecting mechanisms,

the extension and contraction structure including a first to nth (n is a positive integer of 3 or more) components which are connected in order via a first to n-1th connecting mechanisms respectively, and being constructed to extend and contract in a direction where the first to nth components are arranged;

the first component being fixed to a fixed section of the transformable toy;

the first connecting mechanism that connects the first component and the second component being a slide type connecting mechanism that connects the first component and the second component so that the first and second components can slide in the direction;

one or more of the second to n-1th connecting mechanisms except the first connecting mechanism being a rotary type connecting mechanism that connects two adjoining components in such a manner that the two adjoining components can rotate with respect to each other in a predetermined angular range;

the second component being fitted in the first component;

the slide type connecting mechanism being constructed in

such a manner that the second component may slide with respect to the first component between a first position where the second component is entered most deeply inside the first component and a second position where the second component is entered least deeply inside the first component; and

the first to nth components being constructed in such a manner that all or most of the third to nth components may be received inside the first component when the second component is located in the first position.

2. The transformable toy as defined in claim 1, further comprising an engaging portion and an engaged portion which are engaged when the second component is located in the first or second position, and are disengaged when the second component is located in the first or second position and is positively applied a force to cause a slide movement between the first component and the second component, one of the engaging portion and the engaged portion being provided to the first component and the other being provided to the second component.

3. The transformable toy as defined in claims 1 or 2,
the rotary type connecting mechanism comprising:

a rotating shaft provided to one of the two components that are connected to each other by the rotary type connecting mechanism, and extending in a direction that crosses the direction where the components are arranged;

a connected portion provided to the other of the two components, and rotatably connected to the rotating shaft; and

a stopper that defines a rotation range of the other component rotating around the rotating shaft.

4. The transformable toy as defined in claim 1, wherein all of the second to n-1th connecting mechanisms connecting the second to nth components in order are the rotary type connecting mechanisms.

5. The transformable toy as defined in claim 4, wherein the rotary type connecting mechanism used for each of the second to n-1th connecting mechanisms, comprising:

a rotating shaft provided to one of the two components that are connected to each other by the rotary type connecting mechanism, and extending in a direction that crosses the direction where the components are arranged;

a connected portion provided to the other of the two components, and rotatably connected to the rotating shaft; and

a stopper that defines a rotation range of the other component rotating around the rotating shaft,

wherein the rotating shafts of the second to n-1th connecting mechanisms, n-1 in number of the shafts, are arranged in a row along a hypothetical center line extending through the center of a row of the components arranged therein and in the direction where the components are arranged, and

wherein the stoppers of the second to n-1th connecting

mechanisms, located in n-1 positions, are arranged along the hypothetical center line and opposite to the rotating shafts with respect to the hypothetical center line.

6. The transformable toy as defined in claim 5,

wherein the plurality of components are first to fourth components,

the second component includes a first fitted hole surrounded by a peripheral wall and opening toward one direction, and a first connected portion disposed further than the first fitted hole in the one direction;

the third component includes a first fitting portion loosely fitted in the first fitted hole, a first rotating shaft to which the first connected portion is connected, a second fitted hole surrounded by a peripheral wall and opening toward the one direction, and a second connected portion disposed further than the second fitted hole in the one direction, and

the fourth component includes a second fitting portion fitted loosely in the second fitted hole, and a second rotating shaft to which the second connected portion is connected.

7. The transformable toy as defined in claim 6,

wherein one stopper is constituted by a part of an inner wall portion of the first fitted hole and a part of an outer wall portion of the first fitting portion that contacts the part of the inner wall portion of the first fitted hole, and another stopper is constituted by a part of an inner wall portion of

the second fitted hole and a part of an outer wall portion of the second fitting portion that contacts the part of the inner wall portion of the second fitted hole.

8. The transformable toy as defined in claim 1,

wherein a neck section, an arm section, a leg section, or a tail section of the transformable toy is used as the extension and contraction structure.